

REMARKS

This Response, submitted in reply to the Office Action dated May 9, 2008, is believed to be fully responsive to each point of rejection raised therein. Accordingly, favorable reconsideration on the merits is respectfully requested.

Claims 1-19 are pending in the present application.

I. Claim Rejections under 35 U.S.C. § 112

Claims 17 and 19 stand rejected under 35 U.S.C. § 112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

The Examiner states that claims 17 and 19 require that the queue status monitor be integrated with the multiplexer. Applicant refers the Examiner to, for example, Applicant's Fig. 4 and the corresponding description in the specification. Specifically, as discussed in para. [41] of the Applicant's specification, the queue status monitor 42a is provided in the digital subscriber line access multiplexer to monitor a queue status of data packets transmitted from a transmitter to receivers or to monitor a queue status of data packets transmitted from the transmitter to the receivers. Therefore, the specification clearly discloses that the queue status monitor is provided in the multiplexer. See Applicant's Fig. 4.

Therefore, the language of claims 17 and 19 are clearly supported in the Applicant's specification and the 35 U.S.C. § 112, first paragraph rejection of claims 17 and 19 should be withdrawn.

Further, although the claims were rejected under 35 U.S.C. § 112, first paragraph, the claims should also have been rejected on the merits. However, the Examiner has not done so in the present application. Therefore, unless claims 17 and 19 will be deemed allowable, the Examiner should provide the Applicant with sufficient opportunity to respond to any rejection of claims 17 and 19.

II. Rejection of claims 1 and 3 under 35 U.S.C. § 103

Claims 1, 3 and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Aweva et al. (U.S. Patent No. 6,894,974 B1) in view of Hayakawa (U.S. Patent No. 5,042,029).

Claim 1 recites, *inter alia*:

a multiplexer for multiplexing and transmitting to the transmitter the response signals transmitted from the receiver, and transmitting the transmitted data packets from the transmitter to a corresponding receiver, **the multiplexer provided with a queue status monitor for monitoring a queue status of at least one of the transmitted data packets and the response signals, and a congestion control adjuster for instructing the receiver to hold or compress the response signals based on the monitored queue status.**

The Examiner asserts that multiplexer 50 of Aweva teaches the claimed multiplexer.

However, the multiplexer 50 does not include the q monitor 84 (queue status monitor as cited by the Examiner). The q monitor 84 is part of the processor circuit 60 and not the multiplexer 50. Therefore, the multiplexer 50 of Aweva is not provided with a queue status monitor, as claimed.

The Examiner asserts that the queue status monitor is not an integral part of the multiplexer. Applicant submits that the communication system of claim 1 comprises a transmitter, at least one receiver, and a multiplexer. As recited in claim 1, the multiplexer is provided with a queue status monitor and a congestion control adjuster. It would be clear to a

person of skill in the art when reading claim 1 that the multiplexer is provided with the queue status monitor and the congestion control adjuster. As indicated above, Aweva does not teach that multiplexer 50 is provided with the q monitor 84, which is apparent upon viewing Fig. 2 of Aweva.

On page 13 of the Office Action, the Examiner asserts that the claimed limitation does not indicate that the queue status monitor is the integral part of the multiplexer as it recites “the multiplexer is provided with a queue status monitor.” The Examiner reasons that the queue status monitor could be inside or outside of the multiplexer. However, Applicant submits that based upon the claim language, in which the multiplexer is provided with a queue status monitor, the Examiner’s interpretation of the claim is improper. Further, the claims should be read in light of the specification. USPTO personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997).

Applicant refers the Examiner to para. [41] and Fig. 4 of the Applicant’s specification which clearly discloses the relationship between the multiplexer and the queue status monitor. Therefore, the Examiner’s interpretation is not consistent with the Applicant’s disclosure.

The Examiner concedes that Aweva does not teach the claimed congestion control adjuster and cites Hayakawa, col. 1, line 56-68, to cure the deficiency. The aspect of Hayakawa cited by the Examiner discloses a congestion control method in which packets are sent from a source terminal in response to an acknowledgement packet from a destination terminal signaling correct receipt of previous packets from the source terminal. The method detects if traffic congestion occurs in the system and introduces a delay between receipt of an acknowledgement

packet by the system from the destination terminal and subsequent transmission of the acknowledgement packet from the system.

However, Hayakawa merely discloses detecting if traffic congestion occurs in the system and if traffic congestion occurs, then a delay is introduced between receipt of an acknowledgement packet by the system from the destination terminal and subsequent transmission of the acknowledgement packet from the system. There is no teaching or suggestion that a congestion control adjuster for instructing the receiver to hold or compress the response signals is based on a monitored queue status, as claimed. Specifically there is no teaching or suggestion of a monitored queue status. Further, it appears that the transmission of the acknowledgement packet is based on a timer. See col. 4, lines 10-15 and 30-40. In addition, there is no teaching or suggestion that a multiplexer is provided with a congestion control adjuster.

In response to Applicant's arguments, the Examiner cites Hayakawa col. 2, lines 16-34 and Aweva, col. 3, lines 39-48.

The aspects of Aweva cited by the Examiner disclose a queue monitor which produces signals indicative of queue occupancy of a queue buffer in which data packets from a source are received and an acknowledgement rate control signal generator which generates a rate signal in response to a difference between target queue occupancy and measured queue occupancy of a queue buffer. The aspects of Hayakawa cited by the Examiner disclose that introduction of a delay can be implemented by holding the acknowledgement packet in a buffer or recirculating it through a queue formed in a buffer.

However, there is no teaching or suggestion of a relationship between a congestion control adjuster and a queue status monitor or that a congestion control adjuster instructs a receiver to hold or compresses a response signal based on a monitored queue status (from the queue status monitor).

Therefore, assuming Hayakawa could be combined with Aweva, the combination would not teach all of the claimed elements. Consequently, claim 1 and its dependent claims should be deemed allowable.

Claim 18

Claim 18 recites “wherein said congestion control adjuster instructs the receiver to hold or compress the response signals based on the monitored queue status received from the queue status monitor.”

In rejecting claim 18, the Examiner asserts that Hayakawa col. 2, lines 16-34 teaches this aspect of the claim. The aspect of Hayakawa cited by the Examiner discloses:

According to a second aspect of the present invention, there is provided a congestion control apparatus in a packet switched communications system which serves a plurality of data terminal equipments each sending an acknowledgment packet from a destination side of the system signalling correct receipt of packets from a source side of the system. The apparatus comprises a congestion detector for detecting a traffic congestion in the system, a packet detector operable in response to the detection of a traffic congestion by the congestion detector for detecting receipt of an acknowledgment packet from a destination data terminal equipment.

However, contrary to the Examiner's assertions, there is no teaching or suggestion of the claimed congestion control adjuster. Specifically, there is no teaching or suggestion of a congestion control adjuster which instructs a receiver to hold or compress the response signals based on the monitored queue status received from the queue status monitor. As discussed in the Abstract of Hayakawa, a packet detector detects receipt of an acknowledgement packet from a destination terminal, stores the packet in a buffer for a specified period of time, then the stored packet is forwarded to the source terminal upon termination of the specified time period. Therefore, there is no teaching or suggestion that a receiver holds or compresses response signals based on the monitored queue status received from the queue status monitor, as claimed.

Therefore, claim 18 should be deemed allowable.

III. Rejection of claims 2, 4-5, 7-11, and 13-16 under 35 U.S.C. § 103

Claims 2, 4-5, 7-11, and 13-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hayakawa in view of Aweva and further in view of Guttman et al. (USP 7,031,259).

To the extent independent claims 7 and 13 recite subject matter similar to claim 1, they should be deemed allowable for at least the same reasons. Claims 2, 4-5, 8-11, and 14-16 should be deemed allowable by virtue of their dependency to claims 1, 7 and 13 for at least the reasons set forth above. Moreover, Guttman does not cure the deficiencies of Hayakawa and Aweva.

Applicant notes that the Examiner has not addressed the Applicant's arguments with respect to claim 4. Therefore, Applicant submits that in order to provide a complete application file history and to enhance the clarity of the prosecution history record, where the applicant traverses any rejection, the examiner should, if he or she repeats the rejection, take note of the applicant's argument and answer the substance of it. MPEP 707.07(f).

In the present situation, the Examiner has not addressed the Applicant's arguments with respect to claim 4. Therefore, Applicant requests that the Examiner address the Applicant's comments which are resubmitted below for the Examiner's convenience.

Claim 4

Claim 4 recites "wherein the congestion control adjuster instructs the corresponding receiver to compress the response signals if the queue status of the monitored data packets is under a first threshold and over a second threshold." The Examiner asserts that Hayakawa discloses this aspect of the claim. Specifically, the Examiner asserts that the packet switching communications system of Hayakawa discloses a predefined threshold value, citing col. 3, lines 31-41 in support.

The aspect of Hayakawa cited by the Examiner discloses:

"A congestion detector 15 is connected to the network 14 to detect when the traffic volume of the network 14 exceeds a predefined threshold level. Such a congestion detector is known in the art which, in a typical example, detects the traffic volume by measuring the amount of packets processed during a unit interval of time or measuring the storage levels of buffers in the system. When this threshold is exceeded, the congestion detector 15 supplies an output signal to all of the line controllers to impose restriction on the flow of packets in a manner to be described."

However, Hayakawa appears to at most disclose a single threshold level. Therefore, Hayakawa does not teach or suggest a first threshold and a second threshold, let alone that the queue status of the monitored data packets is under a first threshold and over a second threshold. Further, there is no teaching or suggestion that a congestion control adjuster instructs a corresponding receiver to compress the response signals.

For at least the above reasons, claim 4 should be deemed allowable. Further, Guttman does not cure the deficiencies of Hayakawa.

IV. Rejection of claims 6 and 12 under 35 U.S.C. § 103

Claims 6 and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hayakawa in view of Aweva as applied to claims 1 and 7 above, and further in view of Norrell et al. (U.S. Patent No. 6,853,637 B1).

Claims 6 and 12 should be deemed allowable by virtue of their dependency to claims 1 and 7 for at least the reasons set forth above. Moreover, Norrell does not cure the deficiencies of Hayakawa and Aweva.

V. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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